# Learning about Brownfields in Greenville

A Lesson on brownfields excerpted from the Community Quest Program developed by Livability Educator, Jaclin DuRant. Download this and other educational programs at connections.greenvillesc.gov

Brownfields Journal Prompts

What makes a property a brownfield and not just an abandoned building?

How does knowing the history of an area help us understand what challenges that area faces in the present?

What types of land use may result in a property becoming a brownfield? How can the creation of future brownfields be avoided?

List some of the positive things redevelopment. Which of these do you feel is most important,

No windows, no trees, no

cars = this site is probably

abandoned and no longer

being used.

The lack of people being

here on a regular basis

would make me feel

to this building.

#### **BROWNFIELDS**

#### <u>Learning Objectives:</u>

- Students will
- become familiar with the concept of brownfields, and understand that a brownfield is any property where reuse of the land is difficult due to contamination or the possibility of contamination.
- relate brownfields to land use and the consequences of land use as discussed in previous lessons
- learn about Greenville's efforts to redevelop brownfields

Background Information Brownfields are a legacy of industrial and urban land use. A brownfield is a piece of property that is not currently being used, but the reuse or redevelopment of the land is complicated by the presence of (or the suspected presence of) contaminants such as pollutants or hazardous materials that could be a danger to people or the environment.

Brownfields are located in both rural and urban areas and are generally on land that was once used for industrial or commercial activities. Contamination does not have to be present in order for a piece of property to be considered a brownfield: for example, an old gas station used to be located on a lot, but is no longer there. There is a possibility that petroleum leaked from the underground gas tanks and contaminated the soil and/or the ground water in the area. It is also possible that no contamination took place, but until it is determined whether or not the soil and water is safe, the land won't be redeveloped due to the possible health concerns and expense of development. So, even though there may not be contamination in the old gas station site, the possibility of contamination is enough to make it a brownfield.

#### The Impact of Brownfield sites on a Community:

Brownfields are generally considered to be sites that impose limited to no direct health risks to a community, but there are other associated issues with brownfields that cause them to have a negative impact on a community.

Safety – brownfield properties often contain abandoned or derelict

Economic and social impact – abandoned properties can lead to increased vandalism, and either increased crime or the perception of the area being a "bad" place to live, leading to lost revenue and a negative economic impact

Environmental impact – the previous uses that occurred on brownfield sites may have caused contamination that could harm the environment. This is going to vary depending on the previous use of the site, but may include:

- Soil pollution or contamination
- Ground water pollution or contamination
- Impacts on surface water quality through storm water runoff

#### **Brownfield facts**

The EPA estimates that there are more than 450,000 brownfield sites in the US.

In Greenville, the decline of the textile industry in the mid-1900s caused many properties to be left abandoned or underutilized due to the uncertainty of whether or not the land they were on is contaminated

#### **Challenges associated with Brownfields**

The possibility of contamination makes it difficult to reuse or redevelop brownfield sites because of

- Liability or risk associated with contamination
- Contamination on a site makes that site a health risk and as such, it cannot be developed until it is cleaned up
- Even when there is no contamination, the possibility of a contaminated site could scare off investors or lenders and make development difficult.
- Cost of clean up
- When a brownfield is contaminated, the cost of remediation (clean up) can be very high. Clean-up cost may be more than the value of the property.

#### Benefits of redeveloping brownfield properties

Though challenging, the redevelopment of brownfield properties can provide many benefits to a community.

Environmental - redevelopment of a brownfield site requires that the site first be assessed for possible contamination. If it is determined that a site is contaminated, then often, that contamination is cleaned up, reducing the future environmental damage that would be related to the site.

A less obvious way that brownfield redevelopment helps the environment is by encouraging infill development. Infill development occurs when vacant or underutilized properties in an already developed area are redeveloped, or "filled-in." Infill development is often better for the environment than development in other areas because it discourages sprawl, utilizes already existing roads and infrastructure, and often provides amenities close to where people are already living, reducing the need for

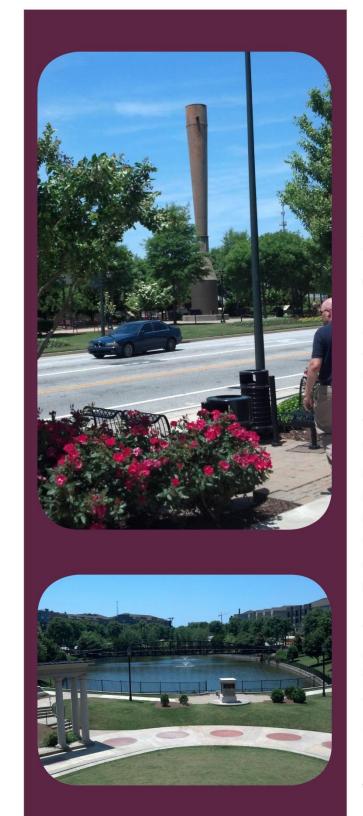
Safety - The presence of dilapidated and abandoned structures can lead to an increase in crime rates. Broken down, unattractive buildings and vacant lots make people feel unsafe, and can give a neighborhood a poor reputation. By demolishing unsafe structures and cleaning up abandoned lots or buildings, brownfield redevelopment can help to reduce crime rates and make people feel







Many brownfield sites in Greenville have been redeveloped with the help of EPA brownfield grants including Fluor Field (top), A J Whitttenberg Elementary School (middle), and the Salvation Army Kroc Center (bottom)



edevelopment. An old steel mill site

levelopment with retail shops, offices,

homes, a movie theater, and a park.

Economic impact - every brownfield redevelopment project is different, but the general goal of brownfield redevelopment is to turn an underutilized, contaminated, or abandoned property into an asset to the community.

Some brownfield redevelopments provide housing for people that need it, some create parks and green spaces that bring in tourism and help protect environmental resources, while others create jobs for people in the community.

#### 3rownfields in Greenville

The EPA estimates that there are more than 450,000 brownfield sites in the United States. Research conducted in 2000 revealed that Greenville is home to more than 50 brownfield sites, ranging in size from less than one acre to twenty acres. Most of Greenville's brownfields are located on Greenville's West side or Reedy River Corridor.

The rise of the textile industry once spurred development in West Greenville, yet the decline of industry contributed to environmental damage, hindering development as a consequence. Uncertainty of what properties were contaminated left many properties abandoned or underutilized, especially around the former textile mills. Known contamination of areas in West Greenville and along the Reedy River Corridor also aided in pushing development elsewhere to other parts of the city, resulting in further decline of the neighborhoods.

The EPA's brownfields grant program provides funds for communities, like Greenville, to perform environmental assessments on brownfield properties in order to determine whether or not the properties are contaminated, the type of and extent of contamination, and the cost of clean-up and redevelopment.

#### **Brownfield Activities:**

**Discuss** the characteristics of a brownfield property and the impacts of brownfield sites on a community.

Follow up with a discussion of how redevelopment of brownfields can provide many benefits for a community. For specific examples, the City of Greenville's Brownfields web page provides a short overview of brownfields projects in the City.

http://www.ctcbrownfields.com/greenville/about.

Read and discuss brownfield redevelopment case studies from the EPA.

## Greenville, SC

- Improving Public Health through Brownfield
- Redevelopment
- Brownfields into Community Gardens and
- Farmers' Markets

### **Identifying Possible Brownfields**

A brownfield can be any piece of property that is not being used to its full capacity. One of the challenges that cities, developers, and property owners face is that it isn't always clear whether a brownfield is contaminated or not.

In this exercise, students will visually analyze pictures of possible brownfield sites and identify possible risks. Students should assess each photo for possible safety, social and economic, and environmental impacts that relate to brownfields.

\*It is important to note that this is a critical thinking exercise. There are no right or wrong answers for this exercise, as there is no way to know for certain whether a property is contaminated without analysis of the soil, water, and/or plant communities found on the site

#### Possible Discussion Questions:

- What do you see?
- Does the site look abandoned/underutilized? How can you tell?
- What do you think the property used to be?

neighboring properties?

- If you lived next to this property, how would it
- make you feel? Would you feel safe here at night? Why or why
- Do you think that the soil or water at this site
- might be contaminated? Why or why not? How do you think this property might affect

## **Example Visual Assessment**



Old gas pumps = old gas station. Possibility of underground storage tanks for fuel and environmental contamination from leaks

The lack of decoration or landscaping makes this place unattractive. If a business opened up next door, they might lose customers because this place isn't very appealing.

I would classify this site as a brownfield because it used to be a gas station, and than means that developers would be unlikely to invest in this property because of the possibility of contamination in the soil and groundwater.

## Now, you try.....

